



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,778	07/17/2000	MARINUS MARIAS BOONE	BO41592	3723

466 7590 04/15/2003

YOUNG & THOMPSON
745 SOUTH 23RD STREET 2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

NI, SUHAN

ART UNIT	PAPER NUMBER
----------	--------------

2643

16

DATE MAILED: 04/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/529,778

Applicant(s)

BOONE ET AL.

Examiner

Suhan Ni

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for a continuation prosecution application (CPA) under 37 CFR 1.53(d), including the fee set forth in 37 CFR 1.9 and 1.27, was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.53(d), and the fee set forth in 37 CFR 1.9 and 1.27 has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.53(d). Applicants' submission for CPA filed on 12/13/2002 has been entered.
2. This communication is responsive to the amendment filed on 11/05/2002.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the newly added limitation of "**two array output signals**" in claim 1 and others must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112, 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2643

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The feature of “**two array output signals**” in claim 1, is not clearly supported by the specification.

Claim Rejections - 35 USC § 112 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 5-6 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Numerous indefiniteness in the claims and the examples are:

In claim 5, the limitation of “a respective weighting factor device” in line 5 is indefinite because it is not clear what it refers to. Please note that numbers, such as 18 carries no patentable weight in the claim.

In claim 6, the limitation of “within each pair an output of the weighting factor device ... a first input of the summing device, a first of the electrical output microphone signals ... a respective one of the electrical output microphone signals” in lines 5-10 is indefinite because it is not clear what it refers to. Please note that numbers, such as 8-12, 26-36 carry no patentable weight in the claims.

In claim 9, the limitation of "an amplitude-adjustment device" in line 2 is indefinite because an amplitude-adjustment device is usually not provided as a delay device as previously claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Zurek (US-5,764,778).

Regarding claim 1, Zurek discloses a hearing aid, comprising: an array of microphones (25), each of the microphones producing an electrical output microphone signals (50a-d), which are used to generate two array output signals (42); means (48) for deriving the two array output signals from the electrical output microphone signals, wherein said electrical signal output is fed to said at least one transmission path for each ear (Fig. 2), and said array of microphones inherently has two main sensitivity directions (Fig. 1).

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Gorike (US-4,904,078).

Regarding claim 1, Gorike discloses a hearing aid, comprising: an array of microphones (3), each of the microphones producing an electrical output microphone signals (Fig. 3), which

Art Unit: 2643

are used to generate two array output signals (6); means (4) for deriving the two array output signals from the electrical output microphone signals, wherein said electrical signal output is fed to said at least one transmission path for each ear (Fig. 3), and said array of microphones inherently has two main sensitivity directions (Fig. 6).

Regarding claims 2-4, Gorike further discloses the hearing aid, wherein the array is mounted on a front and on an arm of a pair of spectacles (Fig. 3) as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Based on the best understanding of the claim language with regarding the 112, 2nd paragraph rejection as mentioned above in paragraph 5 of this office action, claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zurek (US-5,764,778) in view of Adkins et al. (US-5,581,495).

Regarding claims 5-7, Zurek does not clearly teach a series circuit of a number of summing/weighting paired devices as claimed. Adkins et al. disclose a directional acoustic signal processing circuitry for an acoustic device, comprising: a microphone array (40-44); and a circuit (Fig. 5) including a series circuit of a number of summing/weighting paired devices as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide the circuitry taught by Adkins for the hearing aid

Art Unit: 2643

as an alternate choice, in order to enhance desirable directional acoustic characteristics and reduce noise.

Regarding claim 8, Zurek does not clearly teach a delay device as claimed. Since providing a delay device in a directional acoustic signal processing circuitry for an acoustic device is well known in the art, it therefore would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide the delay device for the hearing aid as an alternate choice, in order to further enhance desirable directional acoustic characteristics and reduce noise.

Regarding claim, 9-11, Zurek does not clearly teach all the elements as claimed. Adkins et al. disclose a directional acoustic signal processing circuitry for an acoustic device, comprising: a microphone array (40-44); and a circuit (Fig. 5) including a series circuit of a number of summing/weighting paired devices with elements as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to be motivated to provide the circuitry taught by Adkins for the hearing aid as an alternate choice, in order to enhance desirable directional acoustic characteristics and reduce noise.

Response to Amendment

9. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(703)-308-9322**, and the

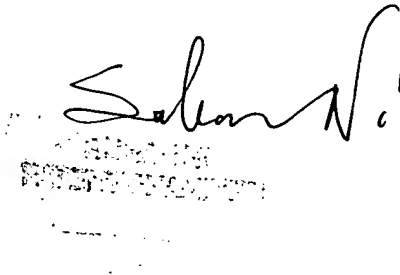
Art Unit: 2643

number for fax machine is (703)-305-9508. The examiner can normally be reached on Monday through Thursday from 9:00 am to 7:30 pm. If it is necessary, the examiner's supervisor, **Curtis Kuntz**, can be reached at (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 305-3900.

Suhan Ni

Thursday, April 10, 2003

A handwritten signature in cursive script, appearing to read 'Suhan Ni', is written over a circular official stamp. The stamp contains some illegible text, likely an official seal or date stamp.